

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A process for making thermoplastic resin coated articles, the process comprising:

applying an aqueous solution or dispersion of a first thermoplastic epoxy resin on the outer surface of an article substrate by dip, spray, or flow coating, the aqueous solution of the first thermoplastic epoxy resin prepared by agitating comprising an acid salt which is the reaction product of a thermoplastic epoxy polymer and in a solution of water with an organic acid or phosphoric acid;

withdrawing the article from the dip, spray, or flow coating at a rate so as to form a first coherent film comprising about 0.05 to about 0.75 grams of the first thermoplastic epoxy resin; and

curing/drying the coated article with an irradiation source for about 5 to 60 seconds until the first film is substantially dried so as to form a first coating.

2. (Previously Presented) The process of Claim 1, further comprising:

applying an aqueous solution or dispersion of a second thermoplastic resin on the first coating of the article by dip, spray, or flow coating;

withdrawing the article from the dip, spray, or flow coating at a rate so as to form a second coherent film;

curing/drying the coated article until the second film is substantially dried so as to form a second coating.

3. (Previously Presented) The process of claim 2 wherein the second thermoplastic resin is selected from the group consisting of polyesters, acrylics, and thermoplastic epoxy resins.

4. (Previously Presented) The process of claim 1 wherein the first coating is crosslinked to provide chemical or mechanical abuse resistance.

5. (Original) The process of claim 1, wherein the article substrate comprises a polymer selected from the group consisting of polyesters, polyolefins, polycarbonates, polyamides and acrylics.

6. (Original) The process of claim 5, wherein the article substrate comprises amorphous and/or semi crystalline polyethylene terephthalate.

7. (Original) The process of claim 5, wherein said article comprises a preform.

8. (Previously Presented) The process of claim 1 which further comprises the removal of any excess aqueous solution or dispersion between the coating and curing/drying steps.

9. (Previously Presented) The process of claim 1 wherein the irradiation source is selected from one or more of the group consisting of infrared heating and electron beam processing, such that the coating is formed without undesirably heating the article substrate.

10. (Currently Amended) The process of claim [[9]] 1 wherein said curing/drying irradiation source is infrared heating and forced air.

11. (Original) The process of claim 10 wherein the temperature of the forced air is between about 10°C to about 50°C and sufficient to prevent undesirable shrinkage of article while maximizing the removal of liquids without prematurely sealing the article's outer surface so as to entrap unexpelled liquid.

12. (Original) The process of claim 9 wherein said curing/drying source is infrared heating.

13. (Original) The process of claim 1 wherein said article is rotated to achieve consistent coating and curing/drying.

14. (Original) The process of claim 1 wherein said thermoplastic resin coatings comprise one or more of the following characteristics: gas-barrier protection, UV protection, scuff resistance, blush resistance, and/or chemical resistance.

15. (Canceled)

16. (Previously Presented) The process of claim 1 wherein the first thermoplastic epoxy resin coating comprises hydroxy-phenoxyether polymers.

17. (Original) The process of claim 16 wherein said hydroxy-phenoxyether polymer coating comprises polyhydroxyaminoether copolymers made from resorcinol diglycidyl ether, hydroquinone diglycidyl ether, bisphenol A diglycidyl ether, or mixtures thereof.

18. (Previously Presented) The process of claim 1 wherein said solution or dispersion of the first thermoplastic epoxy resin comprises organic acid salts made from the reaction of polyhydroxyaminoethers with phosphoric acid, lactic acid, malic acid, citric acid, acetic acid, glycolic acid and/or mixtures thereof.

19. (Previously Presented) The process of claim 2 wherein said second coating is an acrylic, phenoxy, latex, or epoxy coating that is crosslinked during the drying process.

20-51 (Canceled)

52. (Currently Amended) A process for making a thermoplastic resin coated preform, the preform having a neck portion and a body portion, the process comprising:
- forming a first layer on a preform, the forming of the first layer comprises:
- applying an aqueous solution or dispersion comprising an acid salt produced by the reaction of a first thermoplastic epoxy resin and an organic or phosphoric acid on an outer surface of a body portion of the preform by dip coating, spray coating, flow coating, or combinations thereof;
- withdrawing the preform from the dip coating, spray coating, flow coating, or combinations thereof at a rate so as to form a first coherent film comprising an acid salt of the thermoplastic epoxy resin;
- curing/drying the coated preform with an irradiation source until the first film is substantially dried so as to form the first layer.

53. (Previously Presented) The method of Claim 52, wherein the curing/drying of the first thermoplastic epoxy resin is performed so as to form a multilayer preform that exhibits substantially no blushing or whitening when exposed to water.

54. (Canceled)

55. (Canceled)

56. (Canceled)

57. (Previously Presented) The method of Claim 52, wherein a second thermoplastic material is coated on the first layer.

58. (Previously Presented) The method of Claim 1, wherein the first thermoplastic epoxy resin comprises a polyhydroxyaminoether copolymer.

59. (Previously Presented) The method of Claim 2, wherein the second coating is a top coating layer.

60. (Previously Presented) The method of Claim 2, wherein one or more top layers are disposed on the second coating.

61. (Previously Presented) The method of Claim 60, wherein the one or more top layer comprises one or more selected from the group consisting of polyester, acrylic, a second thermoplastic epoxy resin that is different from the first thermoplastic epoxy resin, paraffin, wax, polysilane and low molecular weight polyethylene.

62. **(Previously Presented)** The method of Claim 2, wherein the first thermoplastic epoxy resin is a phenoxy type resin.

63. **(Previously Presented)** The method of Claim 62, wherein the phenoxy type resin is a polyhydroxyaminoether copolymer.

64. **(Canceled).**

65. **(Previously Presented)** The method of Claim 2, wherein the second coating is an acrylic.

66. **(Previously Presented)** The method of Claim 2, wherein the second coating is a polyester.

67. **(Previously Presented)** The method of Claim 66, wherein the polyester comprises polyethylene terephthalate.

68. **(Previously Presented)** The method of Claim 2, wherein the second coating comprises a wax.

69. **(Previously Presented)** The method of Claim 2, wherein the second coating comprises a paraffin.

70. **(Previously Presented)** The method of Claim 2, wherein the second coating comprises a low molecular weight polyethylene.

71. **(Previously Presented)** The method of Claim 2, wherein the second coating comprises a polysilane.

72. **(Previously Presented)** The method of Claim 2, wherein the second coating comprises a different thermoplastic epoxy resin than the first thermoplastic epoxy resin.

73. **(Currently Amended)** The method of Claim 52, wherein the acid salt of the first epoxy resin is produced by the reaction of polyhydroxyaminoethers with an organic acid or phosphoric acid.

74. **(Previously Presented)** The method of Claim 57, wherein the second thermoplastic material additionally comprises a paraffin.

75. **(Previously Presented)** The method of Claim 57, wherein the second thermoplastic material additionally comprises a wax.

76. **(Previously Presented)** The method of Claim 57, wherein the second thermoplastic material is a thermoplastic epoxy resin different than the first thermoplastic epoxy resin.

77. (Previously Presented) The method of Claim 57, wherein the second thermoplastic material additionally comprises a low molecular weight polyethylene.

78. (Previously Presented) The method of Claim 57, wherein the second thermoplastic material is a polyester.

79. (Previously Presented) The method of Claim 78, wherein the polyester comprises polyethylene terephthalate.

80. (Currently Amended) A process for making a thermoplastic resin coated articles, the process comprising:

applying an aqueous solution or dispersion of an acid salt that is the reaction product of a first thermoplastic epoxy resin and phosphoric acid on an outer surface of a plurality of articles by advancing and rotating the plurality of articles through a flow coating;

removing excess aqueous solution or dispersion from the plurality of articles; and curing/drying the plurality of coated articles with an irradiation source ~~for about 5 to 60 seconds~~ to form a first coating layer on each article, the first coating layer comprising [[an]] the acid salt of the first thermoplastic epoxy resin.

81. (Currently Amended) The process of Claim 80, wherein the acid salt of the first thermoplastic epoxy resin is formed by mixing a phenoxy-type thermoplastic with an aqueous solution comprising an organic acid or phosphoric acid.

82. (Currently Amended) The process of Claim 80, wherein the acid salt of the first thermoplastic epoxy resin is an acid salt of a polyhydroxyaminoether copolymer.

83. (Previously Presented) The process of Claim 80, wherein a second coating layer is applied to the plurality of articles.

84. (Previously Presented) The process of Claim 83, wherein the second coating layer is a top coating layer.

85. (Previously Presented) The process of Claim 83, wherein the second coating layer is partially or fully cross linked.

86. (Previously Presented) The process of Claim 85, wherein an intermediate layer is between the first and second coatings.

87. (Previously Presented) The process of Claim 84, wherein an intermediate layer is between the first and second coatings.

88. **(Previously Presented)** The process of Claim 85, wherein the top coating layer comprises polyester.

89. **(Previously Presented)** The process of Claim 88, wherein the polyester is a sulfonated polyester resin.

90. **(Previously Presented)** The process of Claim 84, wherein the top coating layer comprises an acrylic.

91. **(Previously Presented)** The process of Claim 85, wherein the top coating layer comprises an acrylic.

92. **(Previously Presented)** The process of Claim 80, wherein the first coating layer comprises a cross linking additive to increase adhesion to the article.

93. **(Previously Presented)** The process of Claim 80, wherein the article comprises PET.

94. **(Previously Presented)** The process of Claim 80, wherein the article comprises polypropylene.

95. **(Previously Presented)** The process of Claim 83, wherein the first or second coating layers comprises one or more selected from O₂ scavengers and CO₂ scavengers.